

Safe, Consistent, Cost-Effective Cell Culture

AventaCell BioMedical has adopted a state-of-the-art gamma irradiation process, as a pathogen reduction treatment (PRT), for viral inactivation to create an UltraGRO™-PURE GI (UG-P GI) product. **UG-P GI** offers minimized pathogen contamination risk while preserving potent cell culture performance with human mesenchymal stem cells (hMSCs) and other applicable cell types for clinical applications.

Benefits of UltraGRO™-PURE GI

- **US FDA DMF # 34284**
- **JAPAN PMDA Certificate**
- **Ph. Eur. General Chapter 5.2.12.4 Compliance**
- UltraGRO™ –PURE GI supplements for producing clinical grade cells
- Gamma irradiation has been accepted by regulatory agencies as a validated PRT
- Minimal impact on cell culture performance
- Viral inactivated products w/o loss of potency

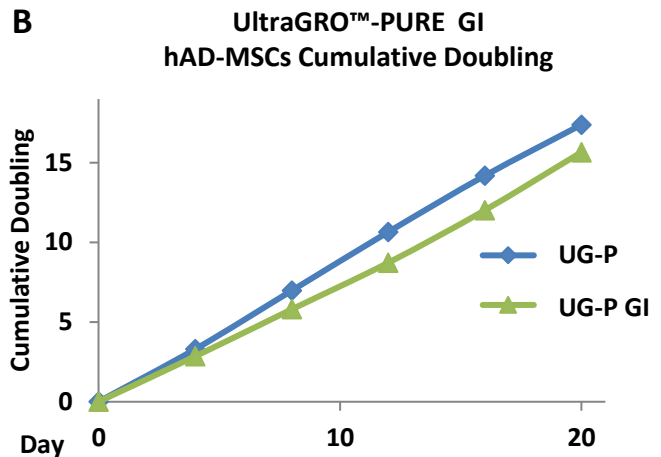
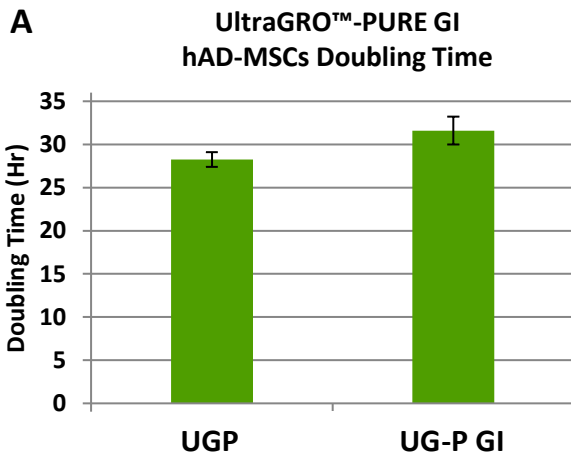


Fig. 1: Gamma irradiation has low impact on UG-P GI potency for MSC cell expansion. Media with 5% (v/v) UG-P GI retained comparable growth kinetics and yields.

Marker %	Cell type	CD73	CD90	CD105	CD34	CD45	CD11b	CD79a	HLA-DR
UG-P GI	AD-MSC	99.97	99.88	95.33	0.34	0.40	0.78	0.37	1.65
	UC-MSC	95.51	99.98	99.09	0.80	0.31	1.08	1.11	1.97
	BM-MSC	99.94	99.50	99.95	0.93	0.15	0.15	0.34	1.45

Table1: Immuno-phenotypical characterization of human MSCs. Human MSCs derived from adipose tissue (AD), umbilical cord matrix (UC), bone marrow (BM) cultured in UltraGRO™-PURE GI for 5 passages displayed characteristic expression of MSC surface markers.



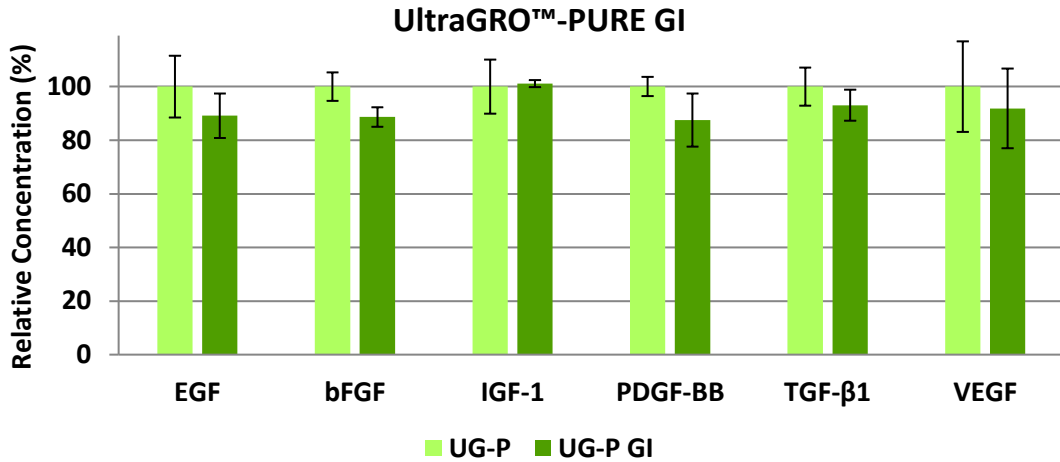


Fig. 2: Growth factors retained comparable cytokine levels after receiving gamma irradiation.

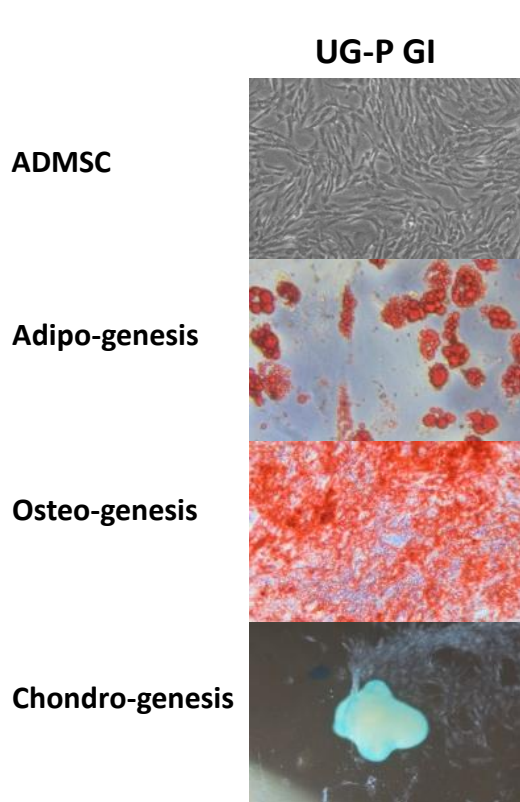


Fig.3: Human adipose tissue derived MSCs retain tri-lineage differentiation capability after cultured in UltraGRO[™]-PURE GI supplemented medium for three passages.

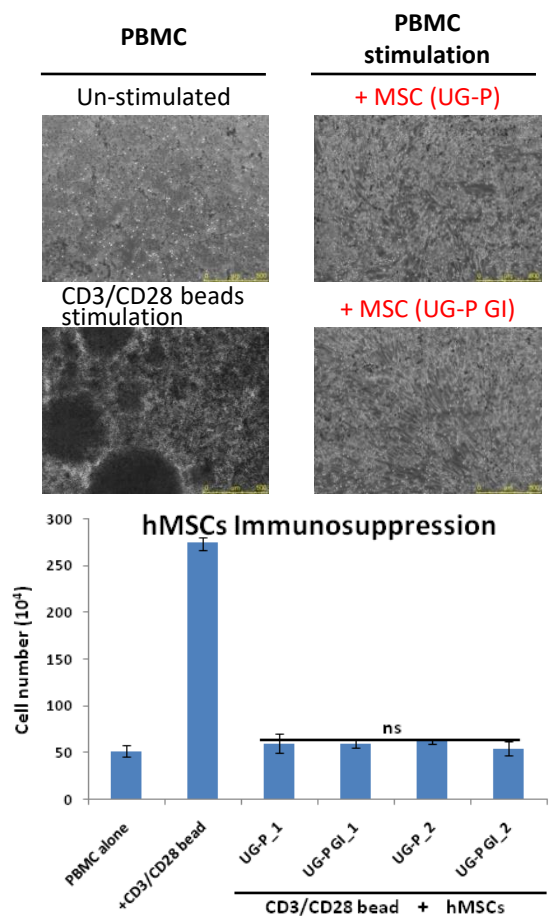


Fig.4: MSCs retained immunomodulation potency

